

# ORAL CAVITY TUMORS IN DOGS. NEW CHANCES TO THE CONVENTIONAL TREATMENTS

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## INTRODUCTION

Oral tumors can arise from gingiva, buccal mucosa, labial mucosa, tongue, tonsils, dental elements, bone of maxilla or mandible, incisive bone and palate bone. Oral neoplasms are the fourth most common cancer overall in dogs<sup>1</sup>.

## OBJECTIVES

- To make a literature review about the main characteristics of canine oral tumors.
- To detail the diagnostic tools used in animals with oropharyngeal masses to achieve a definitive diagnosis and clinical staging.
- To describe the current treatments, especially some surgical techniques, and the new therapeutic approaches.

## ORAL TUMOURS

### Incidence



**Malignant Melanoma (MM)**  
30-40%



**Squamous Cell Carcinoma (SCC)**  
17-25%



**Fibrosarcoma (FSA)**  
8-25%



**Osteosarcoma**  
14.5%



**Acanthomatous Ameloblastoma**  
5%



**Peripheral Odontogenic Fibroma**

**Figure 1-6.** The most common oral tumors in dogs, in descending order of frequency<sup>1</sup>.

### Risk factors

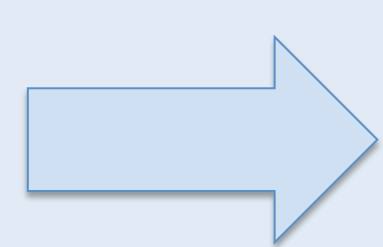
Male dogs have 2.4 times greater risk of developing oral cancer than female dogs<sup>2</sup>. Older animals are most commonly affected as well. Cocker Spaniel, German Shepherd dog, Pointer, Weimaraner, Golden Retriever, Poodle and Boxer are overrepresented breeds<sup>1</sup>.

### Clinical signs

Oral masses frequently go unnoticed by the owner. Clinical signs include hypersalivation, exophthalmos or facial swelling, epistaxis, weight loss, halitosis, bloody oral discharge and dysphagia. Loose teeth may indicate underlying neoplastic bone lysis<sup>1</sup>.

## DIAGNOSIS

- Cytology
- Biopsy
- Ancillary tests



### Clinical staging:

- CT
- Regional lymphadenectomy

## TREATMENT

**Traditional treatments** for oral tumors involve surgery, radiation therapy and conventional chemotherapy; used alone or in combination<sup>1,2</sup>. Also, there are many promising **new therapies**<sup>3,4,5</sup>:

### Chemotherapy

- Metronomic chemotherapy
- Tyrosine kinase inhibitors
- Electrochemotherapy

### Interventional radiology

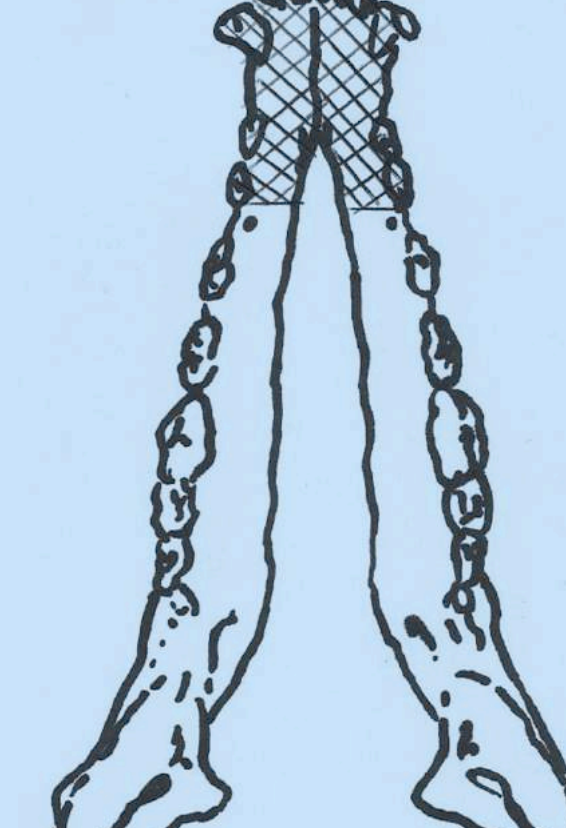
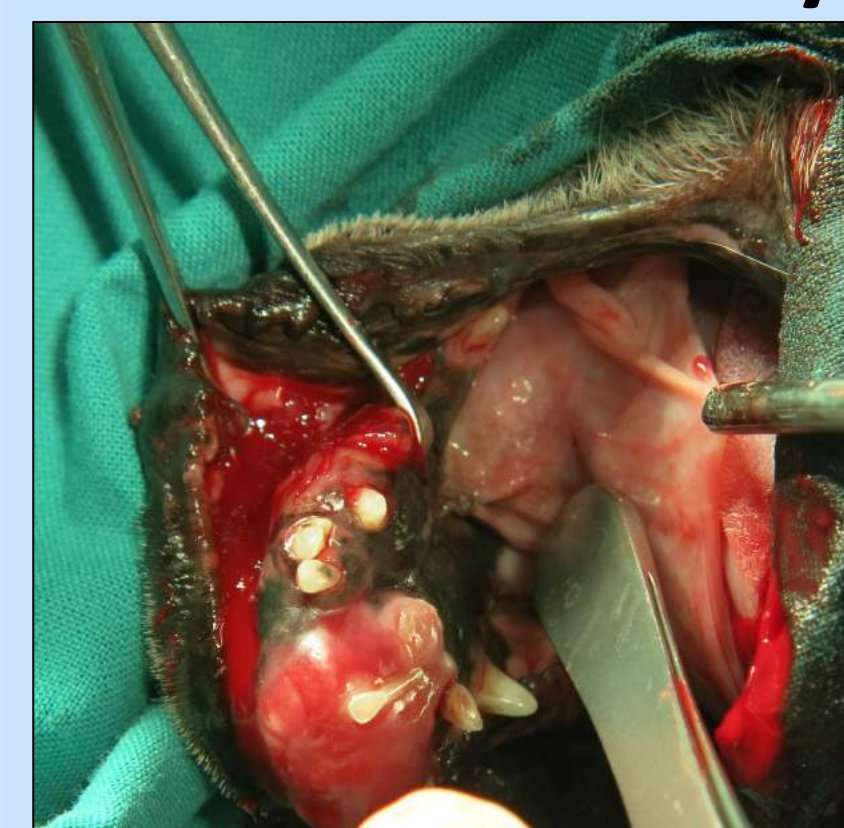
- Intra-arterial chemotherapy
- Cryoablation
- Embolization

### Immunotherapy

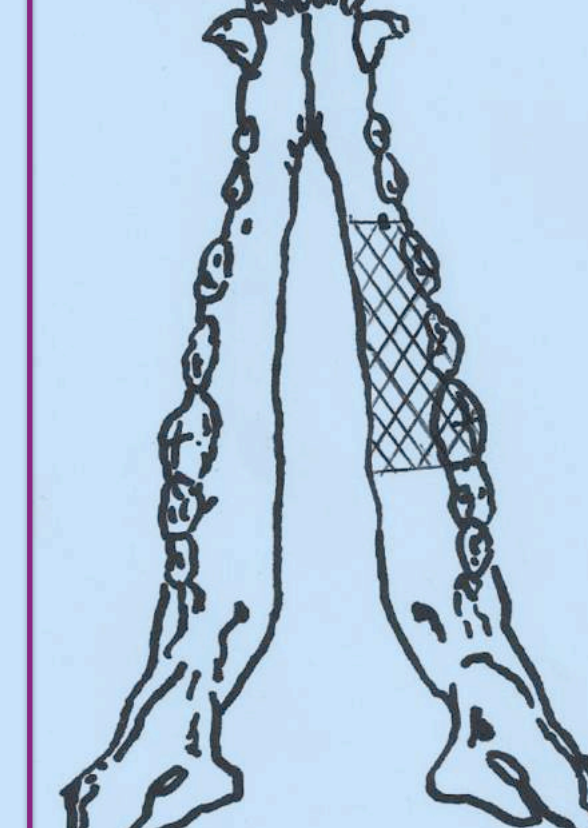
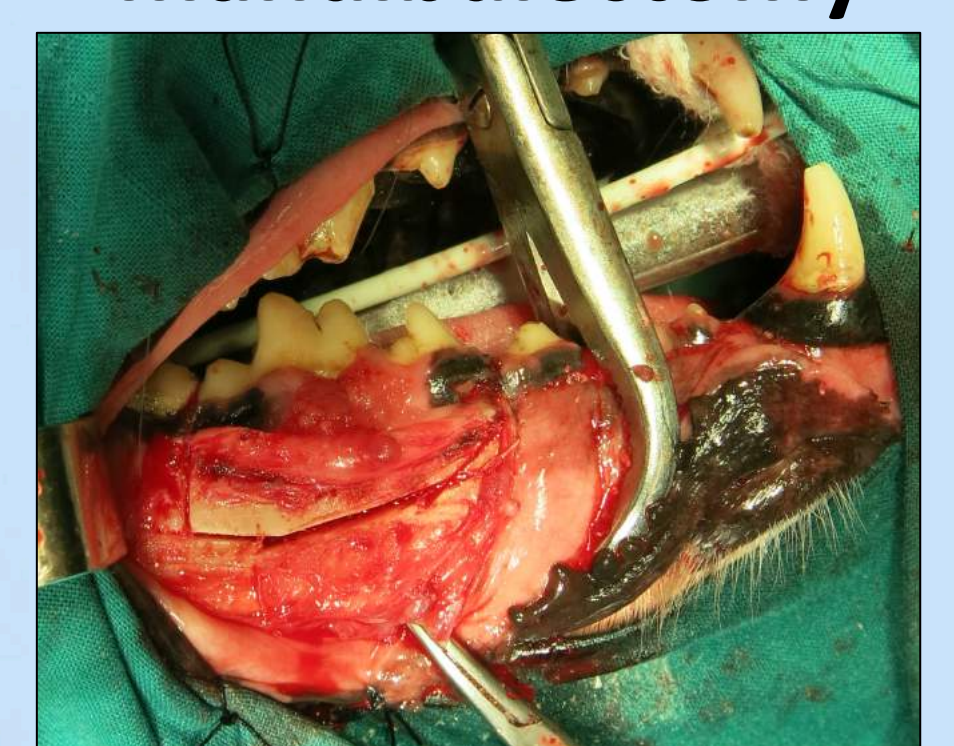
- CSPG4-antigen electrovaccination

## Mandibulectomy

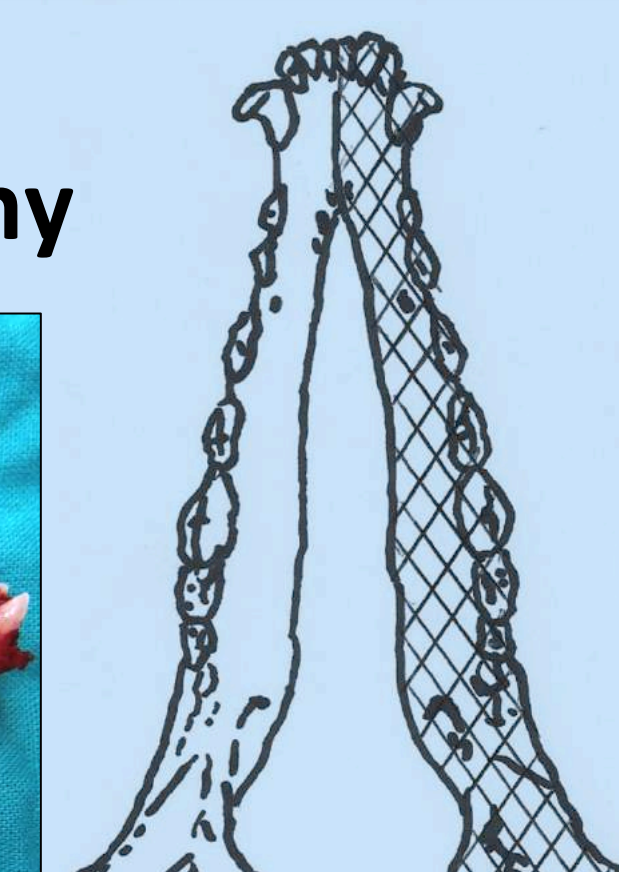
### Bilateral rostral mandibulectomy



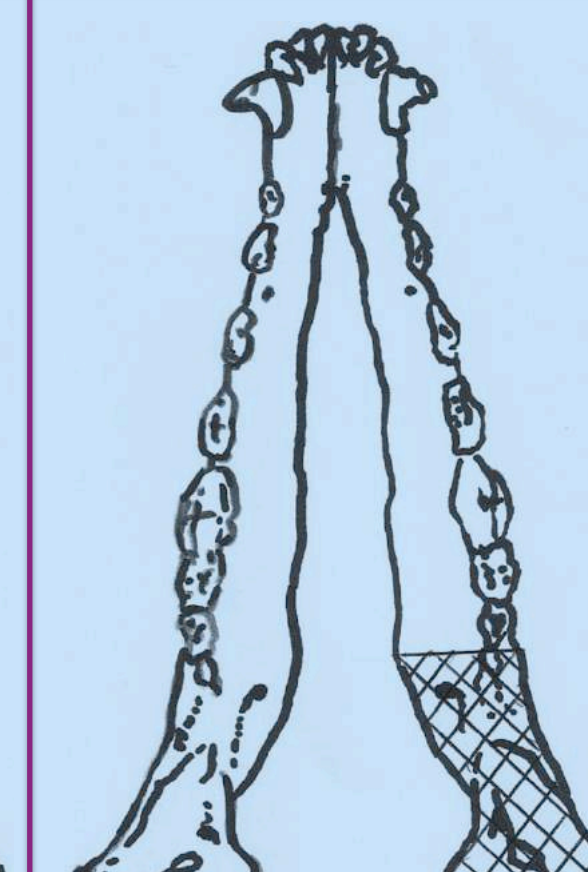
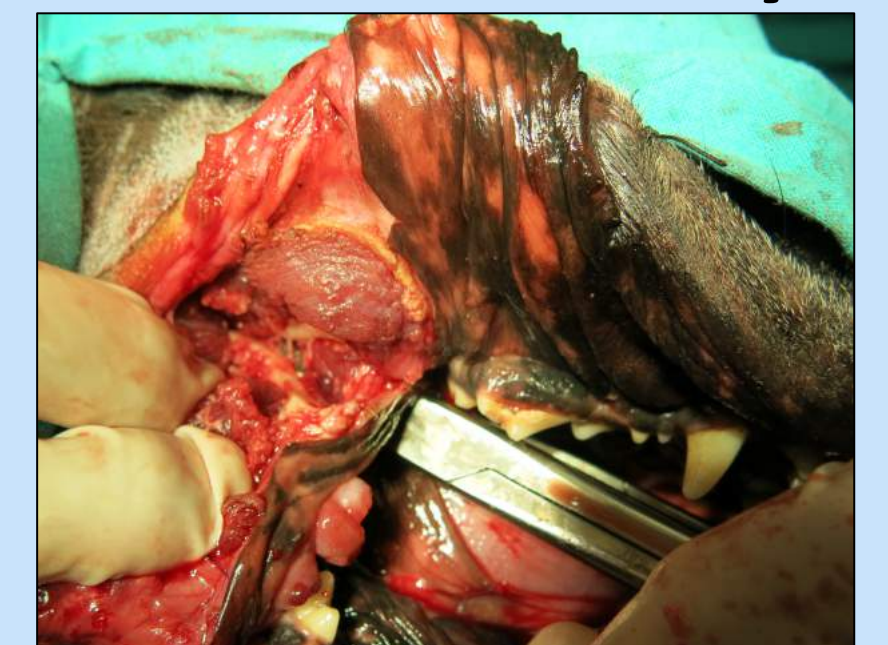
### Segmental mandibulectomy



### Hemimandibulectomy



### Caudal mandibulectomy



**Figure 7-10.** Mandibulectomy is the en bloc excision of a tumor of the lower jaw<sup>1</sup>. Various procedures have been described (Images courtesy of Dr. Félix García).

## PROGNOSIS

	Only surgery		Treatment to improve outcomes
	Local recurrence <sup>2</sup>	Metastasis <sup>2</sup>	
MM	27.5%	30%	Surgery + CSPG4-antigen electrovaccination <sup>5</sup>
SCC	17.2%	3.4%	-
FSA	54.2%	20.8%	Surgery + Radiation therapy

## CONCLUSIONS

- Oral tumors are common in dogs, so a thorough oral exam should be part of routine physical examination to detect them in an early stage.
- Histologic and staging results are essential to guide the choice of treatment and provide prognostic information.
- Surgical excision remains the most frequently indicated method of treatment, although a multimodality therapy may be necessary to improve survival times. New adjuvant therapies such as electrochemotherapy, interventional radiology and immunotherapy, appear to be effective and decrease systemic adverse effects. Nevertheless, further studies are required to determine their optimal combination with conventional procedures.

## REFERENCES

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